

**1- Friction is a force between two objects that are\_\_\_\_\_.It causes objects to\_\_\_\_\_ .**

- a- far apart, slow down**
- b- far apart, speed up**
- c- in contact, speed up**
- d- in contact, slow down**

**2- When Miss Madonna pushes down on the pedal, her bike moves forward. If she stops pedaling, it slows down and stops. What is the name of the force that causes her bike to slow down when she stops pedaling?**

- a- Driving force**
- b- Friction**
- c- a and b**
- d- No correct answer**

**3- When Miss Madonna pushes down on the pedals, her bike moves in a forward motion. What is the name of the force that acts in the opposite direction to the motion of the bike?**

- a- Friction**
- b- The driving force**
- c- A and b**
- d- No correct answer**

**4- Miss Madonna investigates how far a toy car moves down a ramp. She releases the car at the top of the ramp and measures how far it travels from the end of the ramp. She first**

tests the car with wheels on and then removes the wheels and repeats the test. Here are her results:

	With Wheels	Without Wheels
Distance Traveled from the End of the Ramp (cm)	90	15

- The car traveled farthest\_\_\_\_\_ wheels. The force of friction is highest when the car\_\_\_\_\_

- a- With; is sliding down the ramp without wheels
- b- Without; rolls down the ramp on wheels
- c- Without; is sliding down the ramp without wheels
- d- With; rolls down the ramp on wheels

5- Miss Madonna needs to move her toys. She will put them in a box and pull the box along a wooden floor. Which box will be easier to pull?

- a- A box with a rough base
- b- A box with a smooth base
- c- A and b
- d- No correct answer

6- The friction force increases between\_\_\_\_\_surfaces.

- a- smooth
- b- wet
- c- rough
- d- no correct answer

7- From the disadvantages of the friction force are \_\_\_\_\_

- a- it causes damage of the parts of machines

b- it damages the internal parts of machines

c- it increases the temperature

d- all the previous answers

**8- When the friction force increases, an object's speed\_\_\_\_\_**

a- decreases

b- increases

c- doesn't change

d- no correct answer

**9- The front part of trains has a streamlined shape to\_\_\_\_\_**

a- decrease air resistance

b- increase friction force

c- decrease speed

d- no correct answer

**10- The relation between the friction force and the surface area of moving objects is\_\_\_\_\_**

a- direct

b- indirect

c- equal

d- inversely

**11- When you rub your hands together, you feel warm. This is because there is a \_\_\_\_\_ between your hands.**

a- Change

b- Speed

c- Skin

d- Friction force

**12- The speed of a bike decreases when you remove your feet from the pedals. This is due to \_\_\_\_\_**

- a- Friction with the pedals**
- b- Friction with the bike**
- c- Friction with the ground**
- d- No correct answer**

**13- The value of \_\_\_\_\_ changes by changing the type of surface material.**

- a- Friction force**
- b- Movement**
- c- Magnetic force**
- d- No correct answer**

**14- Friction with \_\_\_\_\_ surfaces is stronger than that with \_\_\_\_\_ surfaces.**

- a- Smooth; rough**
- b- Rough; smooth**
- c- Rough; rough**
- d- Smooth; smooth**

**15- Folded paper reaches earth before the stretched one if they fall at the same time from the same distance. This is because the folded paper \_\_\_\_\_**

- a- Has big surface area, so it has higher speed.**
- b- Has less surface area, so it has lower speed.**
- c- Has less surface area, so it has higher speed.**
- d- Has big surface area, so it has lower speed.**



**16- Which piece of equipment can be used to measure the strength of the force of friction?**

a- >

b- >

c- >

d- All of them.



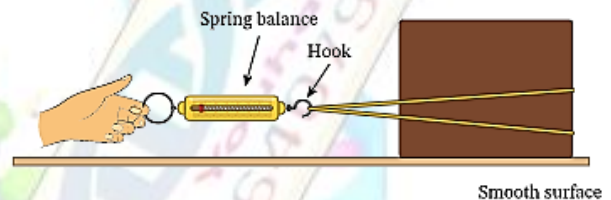
**17-Miss Madonna pulls a smooth plastic box along a smooth surface using a spring balance. If she pulls the same box along a rough surface, what will happen to the reading on the balance?**

a- It will stay the same.

b- It will be lower.

c- It will be higher.

d- No correct answer.



**18- \_\_\_\_\_ is the force of air pushing against a moving object.**

a- Air resistance

b- Water resistance

c- A and b

d- No correct answer

**19-The \_\_\_\_\_ an object moves, the more air resistance it has.**

a- Slower

b- Faster

c- A and b

d- No correct answer

**20- Air resistance \_\_\_\_\_ the object.**

a- slows down

b- speeds up

c- does not change the speed of

d- no correct answer

**21- We can design the shape of an object to make it travel faster in air by reducing air resistance. We call this \_\_\_\_**

a- Friction force

b- Water resistance

c- Streamlining

d- No correct answer

**22- Miss Madonna takes two pieces of modeling clay. She measures how quickly they fall to the ground. Shape B will fall \_\_\_\_ than shape A. Why is this the case?**

a- more quickly; Because shape A is more streamlined

b- more slowly; Because shape B is more streamlined

c- more Slowly; Because shape A is more streamlined

d- more quickly; Because shape B is more streamlined



**23- Air resistance \_\_\_\_ objects when they move through the air.**

**Objects with a \_\_\_\_ create more air resistance when they move.**

a- speeds up; larger surface area

b- slows down; smaller surface area

c- slows down; larger surface area

d- all of the answers are correct

**24- Air resistance is the force of air \_\_\_\_ against a moving object.**

a- Pushing

**b- Pulling**

**c- A and b**

**d- No correct answer**

**25- Type of friction force of an object moving through air is called\_\_\_\_resistance.**

**a- water**

**b- land**

**c- air**

**d- no correct answer**

**26- The friction between internal parts of machines leads to\_\_\_\_**

**a- increase the temperature of their parts**

**b- increase their productivity**

**c- decrease the temperature of their parts**

**d- no correct answer**

**27- The type of friction that results from an object's movement in air is\_\_\_\_\_**

**a- air resistance**

**b- water resistance**

**c- friction**

**d- all of them**

**28- The car brakes is an application on\_\_\_\_\_**

**a- energy**

**b- friction**

**c- motion**

**d- speed**

29- Miss Madonna is walking through the water in a swimming pool. When she tries to walk faster, she finds that it is more difficult to move. Water resistance \_\_\_\_ when speed increases.

- a- decreases
- b- increases
- c- stays the same
- d- no correct answer

30- A rock is falling to the bottom of the ocean. What force is shown by the labeled arrow?

- a- Water resistance
- b- Magnetism
- c- Gravity
- d- No correct answer



31- Miss Madonna has 3 Plasticine shapes. The shapes have the same weight. She drops each shape into a bucket of water. She times how long it takes each shape to fall to the bottom of the bucket. The larger the surface area, the \_\_\_\_ the shape falls. This is because a larger surface area creates \_\_\_\_ water resistance.

Shape			
Time Taken to Fall (Seconds)	2	4	3

- a- more slowly; more
- b- more quickly; more
- c- more quickly; less
- d- no correct answer



**32- Miss Madonna and Habzlem are discussing water resistance.**

**Who is correct?**

Water resistance speeds up  
objects that are moving in water.

Water resistance slows down  
objects that are moving in water.

- a- Both
- b- None of them
- c- Habzlem
- d- Miss Madonna.



**33- When a ball is kicked to roll along the ground, it will stop by the effect of \_\_\_\_\_ force.**

- a- Pushing
- b- Friction
- c- Motion and pushing
- d- Motion

**34- Air acts in \_\_\_\_\_ to the movement direction.**

- a- Same
- b- Along
- c- Opposite
- d- No correct answer

**35- A type of friction resulting from moving of an object through the water.**

- a- Water resistance
- b- Air resistance
- c- Friction force
- d- No correct answer

**36- A fish has a streamlined shape.**

- a- To increase the surface area, so that water resistance increase.

b- To decrease the surface area, so that water resistance increase.

c- To decrease the surface area, so that air resistance decrease.

d- To decrease the surface area, so that water resistance decrease.

**37- Friction \_\_\_\_\_ motion.**

a- Opposes

b- Works in the same direction as

c- Has no effect on

d- Pulls against

**38- The friction force always acts in the \_\_\_\_\_ direction of motion.**

a- Same

b- Along

c- Opposite

d- No correct answer

**39- When you stop pedaling during the movement of the bike the friction force \_\_\_\_\_**

a- Decrease

b- Increase

c- Nothing happens

d- No correct answer

**40- The friction force between rough surfaces is \_\_\_\_\_ than that between smooth surfaces.**

a- Smaller

b- Opposite

c- Greater

d- No correct answer

**41- The ball moves on the wet cement for \_\_\_\_\_ than on the dry cement.**

a- A shorter distance

b- A same distance

c- A longer distance

d- No correct answer

**42- Lighting up a match needs friction force to generate\_\_\_\_\_**

- a- Electricity
- b- Magnetism
- c- Heat
- d- No correct answer

**43- Friction helps in \_\_\_\_\_ the moving bodies.**

- a- Unbalancing
- b- Moving
- c- Balancing
- d- No correct answer.

**44- Sometimes heat energy is generated due to the \_\_\_\_\_**

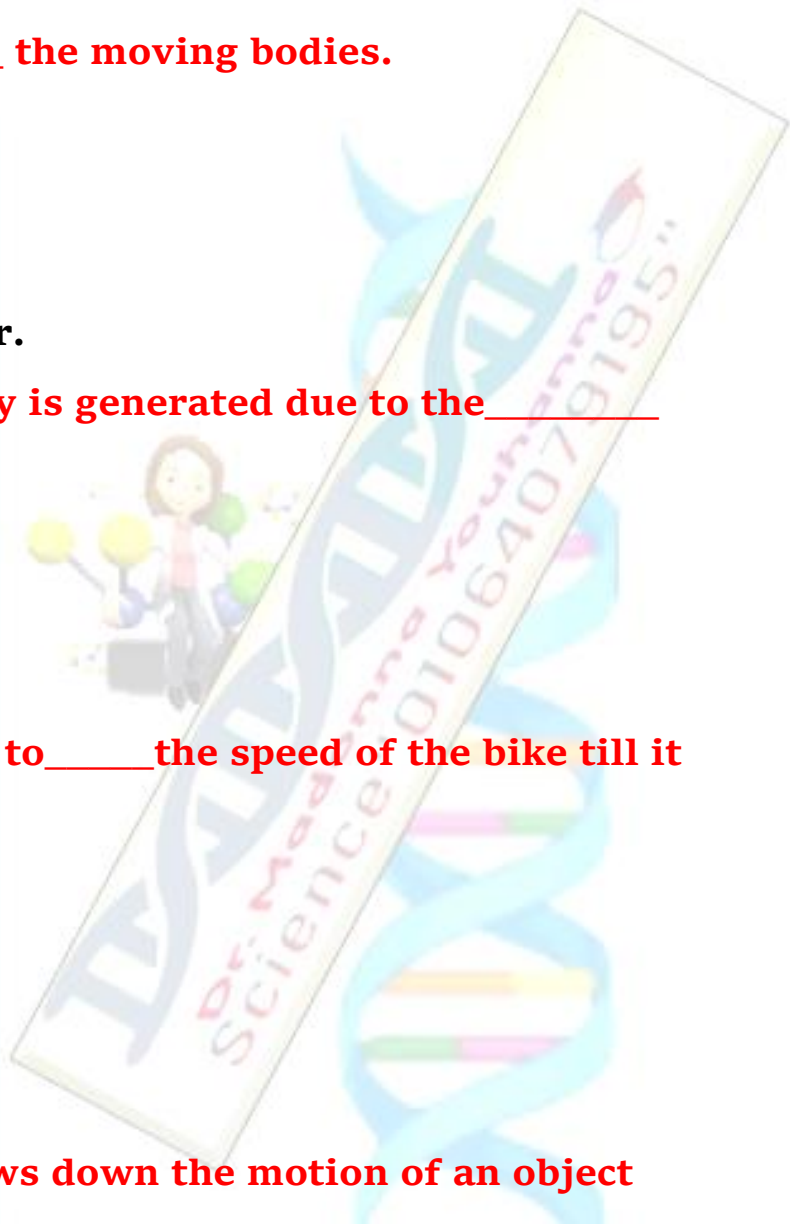
- a- Magnetic force
- b- Water resistance
- c- Air resistance
- d- Friction force

**45- The friction force acts to \_\_\_\_\_ the speed of the bike till it stops.**

- a- speed up
- b- increase
- c- slow down
- d- accelerate

**46- It is the force that slows down the motion of an object**

- a- Friction force
- b- Magnetic force
- c- Movement force
- d- No correct answer



**47- To decrease the friction force, the bodies take the \_\_\_\_ shape.**

- a- spherical
- b- cylindrical
- c- streamline
- d- No correct answer

**48- Ships and boats are designed with streamline shapes.**

- a- To increase the surface area so that the water resistance decreases.
- b- To increase the speed
- c- To decrease the surface area so that the water resistance decreases.
- d- No correct answer

**49- When a parachutist opens his parachute, the air resistance\_\_\_\_\_**

- a- increases
- b- decreases
- c- doesn't change
- d- No correct answer

**50- Water resistance\_\_\_\_\_**

- a- Is the shape that makes the body have less surface area.
- b- Is the friction between water and objects moving through it.
- c- Is the friction between air and objects moving through it.
- d- No correct answer

**51-Air resistance\_\_\_\_\_**



- a- Is the shape that makes the body have less surface area.
- b- Is the friction between water and objects moving through it.
- c- Is the friction between air and objects moving through it.
- d- No correct answer

**52- Streamline shape\_\_\_\_\_**

- a- Is the shape that makes the body have less surface area.
- b- Is the friction between water and objects moving through it.
- c- Is the friction between air and objects moving through it.
- d- No correct answer

**53- What happens if there is no friction force between your shoes and the road.**

- a- It will be easy to slip down on the road while walking.
- b- It wouldn't easy to slip down on the road while walking.
- c- Nothing happens
- d- No correct answer

**54- What happens if the friction between the parts of machines increases.**

- a- Nothing happens
- b- The friction raises temperature of the internal moving parts of machines so machines will be damaged.
- c- The friction raises temperature of the internal moving parts of machines so machines wouldn't be damaged.
- d- No correct answer

**55- The modern cars are designed to have a \_\_\_\_\_ shape.**

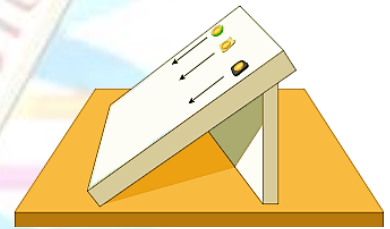
- a- Rectangular
- b- Streamlined
- c- Circular
- d- No correct answer

**56- The relation between the air resistance and the surface area of a body moving through it is \_\_\_\_\_**

- a- inverse
- b- direct
- c- balanced
- d- All the pervious answers

**57- The force that opposes the motion of fish in the sea is \_\_\_\_**

- a- Water resistance
- b- Air resistance
- c- Friction force
- d- No correct answer



**58- A class made sliders by gluing coins onto materials they want to test. They want to find out which materials have the least friction. How will the children decide which slider has the least friction?**

- a- The slider with the most friction will travel the slowest down the slide.
- b- The slider with the least friction will travel the fastest down the slide.
- c- (a) and (b)

d- No correct answer

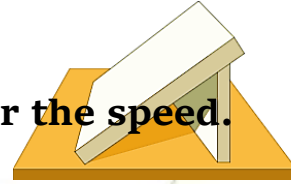
**59- A class made a model of a slide to test which materials would travel fastest down the slide. Which of the following will their test show?**

a- The greater the friction, the greater the speed.

b- Friction does not affect the speed.

c- The less the friction, the slower the speed.

d- The greater the friction, the slower the speed.



**60- Why is it easier to move a ball across a smooth, wooden tile than across a piece of sandpaper.**

a- Because a smooth surface creates less friction than a rough surface

b- Because wood is hotter than sandpaper

c- Because a rough surface creates less friction than a smooth surface

d- Because a wooden tile is shinier than a piece of sandpaper

**MY BEST WISHES**

**MISS MADONNA YOUHANNA**



# MOASSER MODULES

## Science

1

40  
marks

Choose the correct answer from a, b, c or d :

1 Friction force acts in ..... direction of the movement.

- (a) the same
- (b) the opposite
- (c) a perpendicular
- (d) more than one

2 There is ..... between the tires of a moving car and the road.

- (a) a friction force
- (b) an electric energy
- (c) no force
- (d) (b) and (c) are correct

3 Fish have streamlined shapes to .....

- (a) decrease the air resistance.
- (b) decrease the water resistance.
- (c) increase the water resistance.
- (d) increase the air resistance.

4 ..... enables us to walk without slipping down.

- (a) Air resistance
- (b) Sound energy
- (c) Water resistance
- (d) Friction force





Choose the correct answer from a, b, c or d :

1 We need ..... to control the car speed and change its direction.

- (a) water
- (b) air
- (c) friction
- (d) light

2 All the following factors affect the friction force except .....

- (a) the type of the surface material.
- (b) the speed of the moving body.
- (c) the surface area of the moving body.
- (d) the color of the moving body.

3 Trains are designed in streamline shapes due to all the following reasons except .....

- (a) to decrease the surface area.
- (b) to decrease the air resistance.
- (c) to increase the speed of trains.
- (d) to increase the water resistance.

4 Lighting up a match happens due to the ..... that is generated as a result of friction force.

- (a) heat
- (b) light
- (c) sound
- (d) electricity



➤ Choose the correct answer from a, b, c or d :

- 1 All the following examples are from the advantages of friction force except .....
  - (a) car brakes to slow down a car.
  - (b) changing the direction of a car.
  - (c) lighting up a match.
  - (d) increasing the temperature of moving objects.
  
- 2 A bat stretches its wings on landing to .....
  - (a) increase the air resistance.
  - (b) increase the water resistance.
  - (c) decrease the air resistance.
  - (d) decrease the water resistance.
  
- 3 By increasing the surface area of a moving object through water, the water resistance .....
 

(a) decreases to half.	(b) decreases to quarter.
(c) increases.	(d) doesn't change.
  
- 4 Air resistance and water resistance are types of .....
 

(a) magnetic force.	(b) electric energy.
(c) sound energy.	(d) friction force.

**Science**40  
marks

Choose the correct answer from a, b, c or d :

- 1 Air resistance is a type of ..... resulting from the movement of an object through air.
- (a) sound energy (b) magnetic force  
(c) friction force (d) light energy
- 2 The streamline shapes of ships decreases their surface area, so that the water resistance .....
- (a) decreases. (b) increases.  
(c) doesn't change. (d) is doubled.
- 3 The friction force increases in all the following examples except .....
- (a) increasing the speed of the moving object.  
(b) increasing the surface area of the moving object.  
(c) the moving object has a rough surface.  
(d) the moving object has a smooth surface.
- 4 Rockets have streamline shapes to decrease .....
- (a) the surface area only. (b) the air resistance only.  
(c) the surface area and air resistance. (d) the speed and the surface area.

➤ Choose the correct answer from a, b, c or d :

- 1 ..... helps us to catch and hold objects with our hands.
  - (a) Friction force
  - (b) Magnetic force
  - (c) Electric energy
  - (d) Air resistance
- 2 The friction force resulting from the movement of an object through water is known as .....
  - (a) surface area.
  - (b) magnetic force.
  - (c) water resistance.
  - (d) air resistance.
- 3 Aircrafts are designed in streamline shapes to decrease the air resistance that causes .....
  - (a) increasing its volume.
  - (b) changing its color.
  - (c) increasing its speed.
  - (d) decreasing its speed.
- 4 When the speed of a moving object decreases, the friction force .....
  - (a) decreases.
  - (b) increases.
  - (c) is doubled.
  - (d) doesn't change.





1d	2b	3a	4a	5b	6c	7d	8a	9a	10a
11d	12c	13a	14b	15c	16a	17c	18a	19a	20a
21c	22d	23c	24a	25c	26a	27a	28b	29b	30a
31a	32d	33b	34c	35a	36d	37a	38c	39b	40c
41c	42c	43c	44d	45c	46a	47c	48c	49a	50b
51c	52a	53a	54b	55b	56b	57a	58b	59d	60a

Moasser answers

1	2	3	4
b	a	b	d

1	2	3	4
c	d	d	a

1	2	3	4
d	a	c	d

## Science

1	2	3	4
c	a	d	c

## Science

1	2	3	4
a	c	c	a

## ***Revision on March Part - 1***

### ***Choose the correct answer:***

**1. During skating on ice, a (an) .....arises.**

- a. friction force                      b. light energy                      c. electricity                      d. (b) and (c)

**2. ....slows down the moving object.**

- a. Movement force                      b. Heat energy                      c. Friction force                      d. Kinetic energy

**3. Friction force acts in a direction .....the direction of motion.**

- a. opposite to                      b. perpendicular to                      c. parallel to                      d. is the same

**4. There is a friction force between.....**

- a. the bicycle's tire and the road.                      b. the ball and the ground.  
c. two books touch each other.                      d. all the previous answers.

**5. Sliding a body down over another body means that.....**

- a. the friction force between the two bodies is larger than the movement force.  
b. the friction force between the two bodies is smaller than the movement force.  
c. the movement force between the two bodies is smaller than the friction force.  
d. no correct answer.

**6. Friction force depends on.....**

- a. the type of the material surface only.                      b. the surface area of the moving object.  
c. the speed of the moving object.                      d. (a), (b) and (c).

**7. When the surface area of the moving object increases, the friction force .....**

- a. increases.                      b. decreases.                      c. doesn't change.                      d. (a), (b) and (c).

**8. Friction force increases.....**

- a. by increasing the surface area of the moving object.                      b. between rough surfaces.  
c. between smooth surfaces.                      d. (a) and (b).

**9. When the speed of the moving object increases, the friction force.....**

- a. increases.                      b. decreases.                      c. doesn't change.                      d. (a), (b) and (c).

**10. The stopping of a bike gradually during movement is due to the increase in .....**

- a. the friction force.                      b. the magnet.  
c. the attraction force.                      d. all the previous answers.

**11. The moving bike is affected by air resistance that acts .....to its movement.**

- a. in the perpendicular direction                      b. in the opposite direction  
c. in the same direction                      d. parallel

**12. Air resistance increases when.....**

- a. the car velocity decreases.                      b. the car velocity increases.  
c. the car changes its direction.                      d. the car doesn't move.

**13. Modern cars are designed in streamline shapes to.....**

- a. increase air resistance.
- b. decrease water resistance.
- c. be attractive.
- d. decrease air resistance.

**14. Air resistance for a moving bicycle depends on.....**

- a. the speed of the bicycle.
- b. the surface area of the bicycle.
- c. the colour of the bicycle.
- d. (a) and (b).

**15. By increasing the surface area of a moving train, air resistance increases.**

This means that there is .....

- a. a direct relation between them.
- b. an indirect relation between them.
- c. a curved relation between them.
- d. no relation between them.

**16. Rockets and aircrafts have streamline shapes.....**

- a. to increase air resistance.
- b. to decrease air resistance.
- c. to increase the surface area.
- d. to decrease water resistance.

**17. When the parachutist opens his parachute during landing, air resistance .....**

- a. decreases.
- b. increases.
- c. doesn't exist.
- d. remains constant.

**18. Birds or bats stretch their wings on landing to .....**

- a. increase their surface area.
- b. increase the air resistance.
- c. decrease their speed.
- d. (a) , (b) and (c).

**19. .... is the friction force resulting from the movement of any object through water.**

- a. Air resistance
- b. Magnetic force
- c. Water resistance
- d. Kinetic force

**20. By decreasing the speed of a ship through water, water resistance.....**

- a. increases.
- b. decreases.
- c. remains constant.
- d. no correct answer.

**21. Fish or dolphins have streamline shapes to.....**

- a. reduce water resistance.
- b. reduce their surface area.
- c. increase water resistance.
- d. (a) and (b).

**22. All the following are advantages of friction.....**

- a. it helps in moving and stopping cars and bicycles.
- b. it enables us to control the car speed.
- c. it enables us to walk.
- d. it damages the internal moving parts of machines.

**23. The friction between your shoes and the ground prevents.....**

- a. walking.
- b. running.
- c. slipping down.
- d. writing

**24. Car brakes that are used to stop cars depend on .....**

- a. air resistance.
- b. water resistance.
- c. friction force.
- d. (a) , (b) and (c).

**25. Friction force is necessary for .....**

- a. lighting a match.
- b. changing the car direction.
- c. moving a car forwards.
- d. (a), (b) and (c).

**26. Friction between the internal moving parts of a machine causes.....**

- a.the erosion of the machine parts.
- b.the damage of the machine parts.
- c.the increase in their temperature.
- d.all the previous answers.

**27. Friction causes a great loss of money, because.....**

- a.it causes damages for machines.
- b.it forms magnets.
- c.it repairs a lot of machines.
- d.it provides the machines with new parts.

**28. Machines need.....to protect their internal moving parts from damage.**

- a. continuous heating
- b. light
- c. continuous cooling
- d. (a), (b) and (c).

**29. The friction force works in the ..... direction of the moving body.**

- a. Same
- b. Opposite
- c. fixed
- d. inclined

**30. Technicians use ..... to decrease the effect of the friction.**

- a. Water
- b. Sand
- c. glue
- d. ball bearings

**31. The Friction force ..... the temperature between the parts of the machines.**

- a. Increase
- b. Decrease
- c. Still
- d. has no effect

**32. The Friction force ..... when the surface area of a moving object increase**

- a. increase
- b. decreases
- c. Still
- d. has no effect

**33. Ball bearing decrease the Friction force because they have .....**

- a. Large surface
- b. Small surface
- c. Smooth surface
- d. a&c

**34. The object moves in a constant speed when the friction force is ..... the movement force**

- a. More than
- b. The same as
- c. less than
- d. (a) and (b)

**35. The resistance which affects a body moving in the air is called .....resistance.**

- a. Water
- b. Air
- c. Sand
- d. has no effect

**36. The friction force depends on the ..... of the body.**

- a. Length
- b. Volume
- c. Density
- d. has no effect

**37. A car moves properly, due to the friction of the tire with the .....**

- a. Car body
- b. Ground
- c. Air
- d. Water

**38. The birds stretch their wings on landing, to ..... the air resistance**

- a. decrease
- b. Increase
- c. Keep
- d. no effect

**39. The air resistance works in the ..... direction of motion**

- a. opposite
- b. no
- c. same
- d. all



**40. The water resistance ..... when the speed of the ship increases**

- a. Increases      b. Decrease      c. Still the same      d. no effect

**41. The drivers keep the speed in certain limit to ..... the fuel consumption**

- a. increase      b. stop      c. decrease      d. double

**42. The streamline shape ..... the water/air resistance**

- a. Increase      b. invert      c. Decrease      d. Maximize

**43. Friction force acts in the ..... direction to the direction of objects' motion.**

- a. same      b. opposite      c. equal      d. no correct answer

**44. Friction force ..... between smooth surfaces.**

- a. increases      b. decreases      c. doesn't change      d. no correct answer

**45. The air resistance ..... when the car moves fast.**

- a. increases      b. decreases      c. remains as it is      d. is doubled

**46. Mechanical machine must be cooled during operation to ..... .**

- a. raise its temperature      b. decrease its temperature to damage it  
c. decrease its temperature to protect it      d. no correct answer

**47. Birds stretch their wings during landing to .....**

- a. decrease the air resistance      b. increase the air resistance  
c. have constant speed      d. raise their speed

**48. The water resistance decreases when ..... .**

- a. the body has streamline shape      b. the speed decreases  
c. the speed increases      d. (a) and (b).

**49. A moving car needs friction to ..... .**

- a. increase its speed      b. control its direction  
c. decrease its speed      d. (b) and (c)

**50. The friction force ..... between rough surfaces.**

- a. increases      b. decreases      c. remains as it is      d. is doubled

**51. The friction force between a moving object and air is called ..... .**

- a. water resistance      b. air resistance      c. speed      d. (a) and (b)

**52. Friction between the internal moving parts of machines causes a ..... in their temperature.**

- a. raise      b. decrease      c. remains constant      d. no correct answer

**53. Ships and submarines have streamline shapes to ..... .**

- a. increase the water resistance      b. increase their speed  
c. make them move backwards      d. make them move with constant velocity

**March Revision****Choose the correct answer:**

1- During skating on ice, a(an)..... arises.

- a-friction force.                      b-light energy.  
c-electricity.                      d-(b) and (c).

2- ..... slows down the moving object.

- a-movement force.    b-Friction force.              c-Kinetic energy.

3- Friction force acts in a direction ..... the direction of motion.

- a-opposite to.    b-perpendicular to.    c-the direction of motion.

4- There is a friction force between.....

- a-the bicycle's tire and the road.              b-the ball and the ground.  
c-two books touch each other.              d-all the previous answers.

5- Sliding a body down over another body means that.....

- a- the friction force between the two bodies is larger than the movement force.  
b- the friction force between the two bodies is smaller than the movement force.  
c- the movement force between the two bodies is smaller than the friction force.  
d- do correct answer.

6- Friction force depends on.....

- a- the type of the material surface only.  
b- the surface area of the moving object.  
c- the speed of the moving object.  
d- (a) , (b) and (c).

7- when the surface area of the moving object increases , the friction force.....

a-increases.

b-decreases.

c-doesn't change.

d-(a) , (b) and (c).

8- Friction force increases.....

a- by increasing the surface area of the moving object.

b- between rough surfaces.

c- between smooth surfaces.

d- (a) and (b).

9- when the speed of the moving object increases, the friction force.....

a-increases.

b-decreases.

c-doesn't change.

d-(a), (b) and (c).

10- The stopping of a bike gradually during movement is due to the increase in.....

a-the friction force.

b-the magnet.

c-the attraction force.

d-all the previous answers.

11- The moving bike is affected by air resistance that acts ..... to its movement.

a- in the perpendicular direction.

b-in the opposite direction.

c-in the same direction.

d-parallel.

12- Air resistance increases when.....

a-the car velocity decreases.

b-the car velocity increases.

c-the car changes its direction.

d-the car doesn't move.

13- Modern cars are designed in streamline shapes to.....

a-increase air resistance.

b-decrease water resistance.

c-be attractive.

d-decrease air resistance.

14- Air resistance for a moving bicycle depends on.....

a-the speed of the bicycle.

b-the surface area of the bicycle.

c-the colour of the bicycle.

c-(a) and (b).

15- By increasing the surface area of a moving train, air resistance increases this means that there is .....

- a- a direct relation between them.
- b- an indirect relation between them.
- c- a curved relation between them.
- d- no relation between them.

16- Rockets and aircrafts have streamline shapes.....

- a- to increase air resistance.
- b- to decrease air resistance.
- c- to increase the surface area.
- d- to decrease water resistance.

17- when the parachutist opens his parachute during landing, air resistance.....

- a-decreases.
- b-in creases.
- c-doesn't exist.
- d-remains constant.

18- Birds or bats stretch their wings on landing to.....

- a-increase their surface area.
- b-increase the air resistance
- c-decrease their speed.
- d-(a) , (b) and (c).

19- ..... is the friction force resulting from the movement of any object through water.

- a-Air resistance.
- b-Magnetic force.
- c-water resistance.
- d-Kinetic force.

20- By decreasing the speed of a ship through water, water resistance.....

- a-increases.
- b-decreases.
- c-remains constant.
- d-no correct answer.

21- Fish or dolphins have streamline shapes to.....

- a-reduce water resistance.
- b-reduce their surface area.
- c-increase water resistance.
- d-(a) and (b).

22- All the following are advantages of friction except.....

- a- it helps in moving and stopping cars and bicycles.
- b- it enables us to control the car speed.
- c- it enables us to walk.



d- it damages the internal moving parts of machines.

23- The friction between your shoes and the ground prevents.....

a-walking.    b-running.    c-slipping down.    d-writing.

24- car brakes that are used to stop cars depend on.....

a-air resistance.    b-water resistance.

c-friction force.    d-(a), (b) and (c).

25- Friction force is necessary for.....

a-lighting a match.    b-changing the car direction.

c-moving a car forwards.    d-(a) , (b) and (c).

26- Friction between the internal moving parts of a machine causes.....

a- The erosion of the machine parts.

b- the damage of the machine parts.

c- the increase in their temperature.

d- all the previous answers.

27- Friction causes a great loss of money, because.....

a- it causes damages for machines.

b- it forms magnets.

c- it repair a lot of machines.

d- it provides the machines with new parts.

28- machines need ..... to protect their internal moving parts from damage.

a-continuous heating.

b-light.

c-continuous cooling.

d-(a) , (b) and (c).

29- .....can be used to form a thin layer between the internal moving parts of machines to decrease friction.

a. lubricating

b. oiling

c. (a) and (b)

30- 32 Friction force acts in a direction..... the direction of motion.

a. opposite to

b. in the same

c. parallel to

d. no correct answer

31- - All of the following factors reduce the friction force except.....

a. lubricants

b. oil

c. increasing the surface area of the

moving parts.

- 32- - During skating on ice, a (an) .....arises.
- a. friction force                      b. electricity                      c. movement force
- 33- Air resistance increases when.....
- a. The car velocity decreases                      b. The car velocity increases
- 34- c. the car doesn't move.
- 35- When the parachutist opens his parachute during landing, air resistance.....
- a. decreases                      b. increases                      c. remain constant
- 36- 37- When the surface area of the moving object increases, the friction force.....
- a. increases                      b. decreases                      c. doesn't change
- 37- Air resistance .....
- a. acts in the same direction of air motion                      b. has no direction
- c. acts in the opposite direction of air motion                      d. all the previous
- 38- .....is essential to light a match.
- a. pushing force                      b. movement force
- c. friction force                      d. no correct answer
- 39- When the parachutist opens his parachute during landing, air resistance.....
- a. decreases                      b. increases
- c. doesn't change                      d. no correct answer
- 40- 40- The friction force between air and the objects moving through it is called....
- a. ground resistance                      b. air resistance
- c. water resistance                      d. no correct answer
- 41- 41- The brakes of the car are an application of.....
- a. energy                      b. friction                      c. motion                      d. no correct answer
- 42- 42- The friction force between water and the objects moving through it is called....
- a. ground resistance                      b. air resistance

c. water resistance

d. no correct answer

43- 43- To decrease the friction force, the modern cars are designed in a.....shape.

a. cylindrical      b. spherical      c. streamline      d. perpendicular

44- 44- Lighting up a match needs friction force to generate.....

a. heat      b. electricity      c. sound      d. attraction

45- 45 - It is advisable not to increase the car speed up to a certain limit to reduce.....

a. air resistance

b. consumption of fuel

c. (a) , (b)

d. no correct answer

46- 46- Friction force acts in a\an .....direction to the direction of motion.

a. opposite      b. perpendicular      c. parallel      d. no correct answer

47- 47 - By decreasing the speed of a ship through water, water resistance.....

a. increases      b. decreases      c. remains as it is      d. is doubled

48- 48 - The friction force that arises between air and the objects moving through it is called.....

a. ground resistance      b. air resistance      c. water resistance

49- 49 - The brakes of the car are an application of.....

a. energy      b. friction      c. motion      d. no correct answer

50- 50 - During going down, the.....arises.

a. movement force      b. friction force      c. magnetic force

51- By increasing the surface area, friction force.....

a-increases.      b-decreases.

c-equal.      d-(a) and (b).

52- The force that opposes the motion of the boat in water is called.....

a-ari resistance.      b-water resistance.

c-friction force.      d-(a) and (b).

53- The rubber ball moves longer distance on a .....surface.

a-dry cement.      b-ceramic.      c-sand.      d-(b)and(c).



- 54- The fish has streamline shape to ..... the water resistance.  
a-decrease.                      b-increase.              c-(a) and (b).
- 55- The breaks of the car is an application on .....  
a-energy.                      b-motion.                      c-friction.
- 56- The friction is in a direction ..... to the movement force.  
a-opposite.                      b-parallel.                      c-same.
- 57- The friction force between water and the objects moving trough it is called .....  
a-ground resistance. b-air resistance.              c-water resistance.
- 58- The friction between your shoes and the ground prevents .....  
a-walking.              b-running.              c-slipping down.              d-writing.
- 59- The friction force is in the ..... direction of motion.  
a-same.                      b-opposite.                      c-perpendicular.
- 60- The car brakes is an application on .....  
a-energy.                      b-friction.                      c-motion.
- 61- The car brakes is an application on .....  
a-energy.                      b-friction.                      c-motion.
- 62- when the parachutist open his parachute during landing, air resistance.....  
a-increases.              b-decreases.                      c-does not change.
- 63- The friction force between rough surfaces is .....that between smooth surfaces.  
a-larger than.                      b-less than.                      c-similar to.
- 64- when the surface area of the moving object increases, the friction force.....  
a-decreases.              b-increases.                      c-doesn't change.
- 65- Eating food contains much amount of fats ..... the human.



a-harm.                      b-benefit.                      c-not effect.

66- The cars and aeroplanes are designed with streamline shapes, ..... friction.

a-decreases.                      b-increases.                      c-constant.

67- when the surface area of moving object increases, the air resistance.....

a-increases.                      b-decreases.                      c-doesn't change.

68- The friction force between water and the object that moves through is called.....

a-water resistance.                      b-air resistance.                      c-movement.

69- ..... is from the advantages of friction.

a-Wasting money.                      b-Damaging machine parts.

c-Lighting up a match.

70- By decreasing the speed of the ship through water, water resistance.....

a-decreases.                      b-increases.                      c-doesn't change.

71- The friction force ..... by increasing the surface area.

a-decrease.                      b-increase.                      c-constant.

72 The friction between your shoes and the ground prevents.....

**a. walking                      b. slipping down                      c. writing**

73 The presence of water on a road,.....the friction force between car tires and the road.

**a. increases                      b. decreases                      c. doesn't effect**

74 To decrease the friction force, we must use.....

**a. lubricants and oil.                      b. batteries                      c. (a) and (b)**

28 Fish or dolphins have streamline shapes to.....

**a. reduce water resistance                      b. increase water resistance                      c. (a) and (b)**

75- When the parachutist opens his parachute during landing, air resistance.....

**a. decreases                      b. increases                      c. doesn't exist**

76- Friction between a small marble and ceramic is.....that between a big marble and ceramic.

- a. larger than                      b. smaller than                      c. equal to

77- .....is the friction force that arises due to the movement of objects through air.

- a. air resistance                      b. water resistance  
c. movement force                      d. magnetic force

78- The friction between your shoes and the ground prevents.....

- 79-a. walking                      b. slipping down                      c. writing

80-- The presence of water on a road,.....the friction force between car tires and the road.

- 81-a. increases                      b. decreases                      c. doesn't effect

82-To decrease the friction force, we must use.....

- 83-a. lubricants and oil.                      b. batteries                      c. (a) and (b)

84-Fish or dolphins have streamline shapes to.....

- 85-a. reduce water resistance   b. increase water resistance   c. (a) and (b)

86-When the parachutist opens his parachute during landing, air resistance.....

- 87-a. decreases                      b. increases                      c. doesn't exist

88-Friction between a small marble and ceramic is.....that between a big marble and ceramic.

- a. larger than                      b. smaller than                      c. equal to

89-.....can be used to form a thin layer between the internal moving parts of machines to decrease friction.

- a. lubricating                      b. oiling                      c. (a) and (b)

90-Friction force acts in a direction..... the direction of motion.

- a. opposite to                      b. in the same                      c. parallel to                      d. no correct answer

91-All of the following factors reduce the friction force except.....

- a. lubricants                      b. oil                      c. increasing the surface area of the moving parts.

92-During skating on ice, a (an) .....arises.

- a. friction force                      b. electricity                      c. movement force

93-Air resistance increases when.....

- a. The car velocity decreases                      b. The car velocity increases  
c. the car doesn't move.

94-When the parachutist opens his parachute during landing, air resistance.....

- a. decreases                      b. increases                      c. remain constant

95-When the surface area of the moving object increases, the friction force.....

- a. increases                      b. decreases                      c. doesn't change

96- Air resistance .....

- a. acts in the same direction of air motion                      b. has no direction  
c. acts in the opposite direction of air motion                      d. all the previous

97- .....is essential to light a match.

- a. pushing force                      b. movement force  
c. friction force                      d. no correct answer

98- When the parachutist opens his parachute during landing, air resistance.....

- a. decreases                      b. increases  
c. doesn't change                      d. no correct answer

99- The friction force between air and the objects moving through it is called....

- a. ground resistance                      b. air resistance  
c. water resistance                      d. no correct answer

100- The brakes of the car are an application of.....

- a. energy                      b. friction                      c. motion                      d. no correct answer



101- The friction force between water and the objects moving through it is called.....

**a. ground resistance**

**b. air resistance**

**c. water resistance**

**d. no correct answer**

102- To decrease the friction force, the modern cars are designed in a.....shape.

**a. cylindrical**

**b. spherical**

**c. streamline**

**d. perpendicular**

103- Lighting up a match needs friction force to generate.....

**a. heat**

**b. electricity**

**c. sound**

**d. attraction**

104- It is advisable not to increase the car speed up to a certain limit to reduce.....

**a. air resistance**

**b. consumption of fuel**

**c. (a) , (b)**

**d. no correct answer**

105- 23- Friction force acts in a\an .....direction to the direction of motion.

**a. opposite**

**b. perpendicular**

**c. parallel**

**d. no correct answer**

106- By decreasing the speed of a ship through water, water resistance.....

**a. increases**

**b. decreases**

**c. remains as it is**

**d. is doubled**

107- The friction force that arises between air and the objects moving through it is called.....

**a. ground resistance**

**b. air resistance**

**c. water resistance**

26- The brakes of the car are an application of.....

**a. energy**

**b. friction**

**c. motion**

**d. no correct answer**

108- During going down, the.....arises.

**a. movement force**

**b. friction force**

**c. magnetic force**

109- By increasing the speed of the ship through water, water resistance will.....

**a-increase.**

**b-decrease.**

**c-be constant.**

110- The friction force decreases.....



a-between rough surfaces. b-between smooth surfaces.

c-by increasing the surface area.

111- The skin helps the body to get rid of.....

a-sweat.

b-urine

c-carbon dioxide

d-water vapour.

112- By increasing the surface area, friction force.....

a-increases.

b-decreases.

c-equal.

d-(a) and (b).

113- The force that opposes the motion of the boat in water is called.....

a-air resistance.

b-water resistance.

c-friction force.

d-(a) and (b).

114- The rubber ball moves longer distance on a .....surface.

a-dry cement.

b-ceramic.

c-sand.

d-(b) and (c).

115- The fish has streamline shape to ..... the water resistance.

a-decrease.

b-increase.

c-(a) and (b).

116- The brakes of the car is an application on .....

a-energy.

b-motion.

c-friction.

117- The friction is in a direction .... to the movement force.

a-opposite.

b-parallel.

c-same.

118- The friction force between water and the objects moving through it is called .....

a-ground resistance. b-air resistance. c-water resistance.

119- The friction between your shoes and the ground prevents .....

a-walking.

b-running. c-slipping down.

d-writing.

120- The friction force is in the ..... direction of motion.

a-same.

b-opposite.

c-perpendicular.

121- The car brakes is an application on .....

a-energy.

b-friction.

c-motion.

122- The car brakes is an application on .....

a-energy.

b-friction.

c-motion.

123- when the parachutist open his parachute during landing, air resistance.....

a-increases.      b-decreases.      c-does not change.

124- The friction force between rough surfaces is .....that between smooth surfaces.

a-larger than.      b-less than.      c-similar to.

125- when the surface area of the moving object increases, the friction force.....

a-decreases.      b-increases.      c-doesn't change.

126- Eating food contains much amount of fats ..... the human.

a-harm.      b-benefit.      c-not effect.

127- The cars and aeroplanes are designed with streamline shapes, ..... friction.

a-decreases.      b-increases.      c-constant.

128- when the surface area of moving object increases, the air resistance.....

a-increases.      b-decreases.      c-doesn't change.

129- The friction force between water and the object that moves through is called.....

a-water resistance.      b-air resistance.      c-movement.

130- ..... is from the advantages of friction.

a-Wasting money.      b-Damaging machine parts.

c-Lighting up a match.

131- By decreasing the speed of the ship through water, water resistance.....

a-decreases.      b-increases.      c-doesn't change.

132- The friction force ..... by increasing the surface area.

a-decrease.      b-increase.      c-constant.

133- During skating on ice, a(an)..... arises.

a-friction force.      b-light energy.

c-electricity.      d-(b) and (c).

134- ..... slows down the moving object.

a-movement force.      b-Friction force.      c-Kinetic energy.

- 135- Friction force acts in a direction ..... the direction of motion.  
a-opposite to.    b-perpendicular to.    c-the direction of motion.
- 136- There is a friction force between.....  
a-the bicycle's tire and the road.    b-the ball and the ground.  
c-two books touch each other.    d-all the previous answers.
- 137- Sliding a body down over another body means that.....  
e- the friction force between the two bodies is larger than the movement force.  
f- the friction force between the two bodies is smaller than the movement force.  
g- the movement force between the two bodies is smaller than the friction force.  
h- do correct answer.
- 138- Friction force depends on.....  
e- the type of the material surface only.  
f- the surface area of the moving object.  
g- the speed of the moving object.  
h- (a) , (b) and (c).
- 139- when the surface area of the moving object increases , the friction force.....  
a-increases.    b-decreases.  
c-doesn't change.    d-(a) , (b) and (c).
- 140- Friction force increases.....  
e- by increasing the surface area of the moving object.  
f- between rough surfaces.  
g- between smooth surfaces.  
h- (a) and (b).
- 141- when the speed of the moving object increases, the friction force.....  
a-increases.    b-decreases.  
c-doesn't change.    d-(a), (b) and (c).

- 142- The stopping of a bike gradually during movement is due to the increase in.....
- a-the friction force.                      b-the magnet.  
c-the attraction force.                      d-all the previous answers.
- 143- The moving bike is affected by air resistance that acts ..... to its movement.
- b- in the perpendicular direction.      b-in the opposite direction.  
c-in the same direction.                      d-parallel.
- 144- Air resistance increases when.....
- a-the car velocity decreases.                      b-the car velocity increases.  
c-the car changes its direction.      d-the car doesn't move.
- 145- Modern cars are designed in streamline shapes to.....
- a-increase air resistance.                      b-decrease water resistance.  
c-be attractive.                      d-decrease air resistance.
- 146- Air resistance for a moving bicycle depends on.....
- a-the speed of the bicycle.      b-the surface area of the bicycle.  
c-the colour of the bicycle.      c-(a) and (b).
- 147- By increasing the surface area of a moving train, air resistance increases this means that there is .....
- e- a direct relation between them.  
f- an indirect relation between them.  
g- a curved relation between them.  
h- no relation between them.
- 148- Rockets and aircrafts have streamline shapes.....
- e- to increase air resistance.  
f- to decrease air resistance.  
g- to increase the surface area.  
h- to decrease water resistance.
- 149- when the parachutist opens his parachute during landing, air resistance.....
- a-decreases.                      b-in creases.



c-doesn't exist.

d-remains constant.

150- Birds or bats stretch their wings on landing to.....

a-increase their surface area.

b-increase the air resistance

c-decrease their speed.

d-(a) , (b) and (c).

151- ..... is the friction force resulting from the movement of any object through water.

a-Air resistance.

b-Magnetic force.

c-water resistance.

d-Kinetic force.

152- By decreasing the speed of a ship through water, water resistance.....

a-increases.

b-decreases.

c-remains constant.

d-no correct answer.

153- Fish or dolphins have streamline shapes to.....

a-reduce water resistance.

b-reduce their surface area.

c-increase water resistance.

d-(a) and (b).



# Revision on unit one

---

## **1. Choose the correct answer :-**

1. The direction of the friction force is ..... the movement direction .

**( vertical – opposite – same – horizontal )**

2. .... Slows down the moving object .

**( friction force – movement force – friction force – pushing force )**

3. There is a friction force between .....

**(the bicycle's tires and the road - the ball and the ground - two books - all the previous answers )**

4. The friction force between a pen and a rough surface is ..... That between the same pen and a smooth surface.

**( larger than – smaller than – equal to – no correct answer )**

5. Which surfaces of the following have the greatest friction force? .....

**( glass& glass – rubber & dry cement – rubber & wet cement – glass & wet cement )**

6. Modern cars are designed with streamline shapes to .....

**( increase air resistance – decrease water resistance – decrease air resistance – increase water resistance )**

7. There is ..... relation between air resistance and the surface area of the moving body.

**( curved – direct – indirect – opposite )**

8. The rockets and aircrafts have streamline shapes to .....

**(increase air resistance – decrease air resistance – increase the surface area – decrease water resistance )**

9. The fish has streamline shape to .....

**( reduce water resistance – reduce its surface area – increase water resistance – a &b )**

10. The friction between your shoes and the ground prevents .....

**(walking – running – slipping down – writing )**

11. The friction force decreases .....

**( by increasing the speed of the object – between rough surfaces – between smooth surfaces – no correct answer )**

12. Friction force causes ..... in temperature

**( decrease – rise – no change – all the previous )**

13. From disadvantages of friction force .....

**( it causes erosion of the parts of machine – it damages the internal parts of machine – increases temperature – all the previous answers )**

14. A friction force between air and the moving objects through is called .....

**( ground resistance – air resistance – water resistance – no correct answer )**

15. When the parachutists opens his parachute , the air resistance .....

**( increases – decreases – doesn't change – no correct answer )**

16. When the speed of the object increases , the air resistance .....

**( increases – decreases – doesn't change – no correct answer )**

17. To decrease the friction force , the bodies take the ..... shape

**( spherical – cylindrical – streamline – flat )**

18. A friction force between water and the moving objects through is called

.....

**( ground resistance – air resistance – water resistance – no correct answer )**

19. When the parachutists lands , the direction of air resistance is .....

**( opposite – in the same direction – perpendicular – horizontal )**

**20- The force that slows down the object motion is called .....force**

(Friction – movement – pushing – magnetic )

**21- ..... increase by increasing surface area of the moving object .**

(Water resistance - air resistance – land resistance -water and air resistance )

**22- To decrease air resistance the ships are designed with .....shapes**

( stream line – rectangular – circular - square )

**23- When the car moves so slowly air resistance .....**

(Decrease – increase – remain constant – doesn't change )

**24- The value of .....between two surface depend on type of the surface material .** (Friction – movement – pushing – magnetic )

**25- friction has bad effect on machines because .....**

- a- It protects machine
- b- Damage the internal moving parts
- c- Increase its temperature
- d- b &c

**26- All the following are from advantages of friction force except .....**

- a- lighting a match
- b- helps us to walk
- c- control car speed and changes direction
- d- Damage the internal moving parts

**27- The brakes of the car an application of .....**

(Friction – movement – pushing – magnetic )

**28- Lightning a match needs friction force to produce .....**

( heat – electric - sound – magnetic )

**29- Friction force is necessary for.....**

- a- lighting a match
- b- helps us to walk
- c- control car speed and changes direction
- d- all the previous

**30- You can walk without slipping down due to the .....**

- a- air resistance
- b- water resistance
- c- friction force
- d- movement force

**32- When the parachutist open the parachute .....**

- a- air resistance increase
- b- surface area increase
- c- speed decrease
- d- all the previous



# March Revision

## ★ Choose the right answer:

**Mr. Ahmed ElBasha**

1. By increasing the surface area, friction force .....  
a. increases.      b. decreases.      c. equal.      d. (a) and (b).
2. The force that opposes the motion of the boat in water is called .....  
a. air resistance.      b. water resistance.      c. friction force.
3. The fish has streamline shape to ..... the water resistance.  
a. decrease      b. increase      c. (a) and (b)
4. The breaks of the car is an application on .....  
a. energy.      b. motion.      c. friction.
5. The friction is in a direction ..... to the movement force.  
a. opposite      b. parallel      c. same
6. The friction force between water and the objects moving through it is called .....  
a. ground resistance.      b. air resistance.      c. water resistance.
7. The friction between your shoes and the ground prevents .....  
a. walking.      b. running.      c. slipping down.
8. The friction force is in the ..... direction of motion.  
a. same      b. opposite      c. perpendicular
9. When the parachutist open his parachute during landing, air resistance .....  
a. increases.      b. decreases.      c. does not change.
10. The friction force between rough surfaces is ..... that between smooth surfaces.  
a. larger than      b. less than      c. similar to
11. .... is from the advantages of friction.  
a. Wasting money      b. Damaging machine parts      c. Lighting up a match

**12.The friction force ..... by increasing the surface area.**

- a. decrease                      b. increase                      c. constant

**13.There is a ..... relationship between speed and friction force.**

- a. inverse                      b. direct                      c. no relation

**14.When the speed of body increase, the air resistance .....**

- a. increase.                      b. decrease.                      c. equal.

**15.The friction force acts in a direction ..... to the direction of motion.**

- a. opposite                      b. parallel                      c. same

**16.The rubber ball is moved for a longer time on a ..... surface.**

- a. dry cement                      b. ceramic                      c. glass                      d. (b) and (c)

**17.By increasing the speed of object, the friction force .....**

- a. decreases.                      b. remains as it is.  
c. increases.                      d. increases and decreases.

**18.Brakes of the car is an application on .....**

- a. energy.                      b. motion.                      c. speed.                      d. friction

**19.The friction between the car tire and the ground helps the car to .....**

- a. move.                      b. stop.                      c. slow.                      d. all the previous.

**20.There is ..... relation between the water resistance and the surface area of the moving body.**

- a. a curved                      b. a direct                      c. an indirect                      d. no

**21..... is a type of friction force as a body moves through water.**

- a. Air resistance                      b. Water resistance  
c. Electrical resistance                      d. Magnetic resistance

**22.Sliding a body down over another body means that .....**

- a. friction force between the two bodies is larger than the movement force.  
b. friction force between the two bodies is smaller than the movement force.  
c. movement force between the two bodies is smaller than the friction force.  
d. friction force is equal to movement force.



**23. The friction force between rough surfaces is ..... that between smooth surfaces.**

- a. larger than                      b. less than                      c. zero                      d. similar

**24. .... is (are) from the factors affecting water resistance.**

- a. The speed of the body through water  
b. The surface area of the body that moves through water  
c. Lighting up a match  
d. (a) and (b)

**25. Air resistance for a moving bicycle depends on .....**

- a. the speed of the bicycle.                      b. the surface area of the bicycle.  
c. the colour of the bicycle.                      d. (a) and (b).

**26. The stopping of a bike gradually during movement is due to the increase in ....**

- a. the friction force.                      b. the magnet.  
c. the attraction force.                      d. all the previous answers.

**27. Birds or bats stretch their wings on landing to .....**

- a. increase their surface area.                      b. increase the air resistance.  
c. decrease their speed.                      d. (a), (b) and (c).

**28. By decreasing the speed of a ship through water, water resistance .....**

- a. increases.                      b. decreases.  
c. remains constant.                      d. no correct answer.

**29. Friction force is necessary for .....**

- a. lighting a match.                      b. changing the car direction.  
c. moving a car forwards.                      d. (a), (b) and (c).

**30. Friction between the internal moving parts of a machine causes .....**

- a. the erosion of the machine parts.  
b. the damage of the machine parts.  
c. the increase in their temperature.  
d. all the previous answers.

**31. Friction causes a great loss of money, because .....**

- a. it causes damages for machines.
- b. it forms magnets.
- c. it repairs a lot of machines.
- d. it provides the machines with new parts.

**32. Machines need ..... to protect their internal moving parts from damage.**

- a. continuous heating
- b. light
- c. continuous cooling
- d. (a), (b) and (c).

**33. Friction force acts .....**

- a. in the same direction of the movement.
- b. in the opposite direction of movement.
- c. perpendicular to the movement.
- d. in different direction.

**34. The friction force increases .....**

- a. by increasing the surface area of the moving object.
- b. between rough surfaces.
- c. between smooth surfaces.
- d. a and b

**35. The stopping bike gradually during movement is due to the increase of .....**

- a. the friction force.
- b. the magnet
- c. the attraction force.
- d. all previous.

**36. The moving bike is affected by air resistance that acts ..... To its movement.**

- a. in the perpendicular direction
- b. in the opposite direction
- c. in the same direction
- d. in all directions.

**37. Air resistance increases when .....**

- a. the car velocity decreases
- b. the car velocity increases.
- c. the car changes its direction
- d. the car doesn't move.

**38. Modern cars are designed with streamline shapes to .....**

- a. increase air resistance
- b. decrease water resistance.
- c. be attractive
- d. decrease air resistance.

**39. There is ..... Relation between air resistance and the surface area of the moving body.**

- a. a curved
- b. a direct
- c. an indirect
- d. no

**40. When the parachutist opens his parachute during landing, air resistance .....**

- a. decreases
- b. increases
- c. doesn't exist.

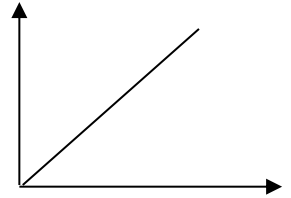
**Model answer**

- |      |      |      |      |
|------|------|------|------|
| 1. A | 11.C | 21.B | 31.A |
| 2. B | 12.B | 22.B | 32.C |
| 3. A | 13.B | 23.A | 33.B |
| 4. C | 14.A | 24.D | 34.D |
| 5. A | 15.A | 25.D | 35.A |
| 6. C | 16.D | 26.A | 36.B |
| 7. C | 17.C | 27.D | 37.B |
| 8. B | 18.D | 28.A | 38.D |
| 9. A | 19.D | 29.D | 39.B |
| 10.A | 20.B | 30.D | 40.B |

## Science revision sheet

### j5 , Second term

#### Friction



**Q1 : Look at the figures and answer the questions :**

- This figure represent the relation between ..... and .....

**Q2 : Choose :**

1- During skating on ice , ..... arises

- a- Friction force      b- Light energy      c- electricity      d- (b) & (c)

2- Friction between the internal moving parts of a machine causes :

- a- the erosion of the machines parts      b- the damage of the machine parts  
c- the increase in their temperature      d- all of the previous answers

3- The friction between your shoes and the ground prevents .....

- a- walking      b- running      c- slipping down      d- writing

4- car brakes that are used to stop cars depend on .....

- a- air resistance      b- water resistance      c- friction force      d- (a ,b & c)

5- The brake of the car is an application for .....

- a- Energy      b- motion      c- friction

6- Lighting up a match needs friction force to generate .....

- a- heat      b- sound      c- electricity      d- attraction

7- All OF TE FOLLOWIN IS ADVANTAES OF FRICTION FORCE EXCEPT .....

- a- It helps in moving and stopping cars      b- It is necessary for lighting a match  
c- It enable us to walk      d- It causes increasing of temperature

8- By increasing the speed of ship through water, water resistance will ...

- a- increase      b- decrease      c- be constant

9- when you rub your hands together, ..... arises between them

- a- the friction force      b- the movement force      c- the pushing force  
d- no correct answer



10- The friction force decrease .....

- a- between rough surfaces
- b- between smooth surfaces
- c- by increasing the surface area

11- By increasing the surface area, friction force .....

- a- increase
- b- decrease
- c- equal
- d- (a) & (b)

12- The rubber ball moves longer distance on a .....

- a- Dry cement
- b- ceramic
- c- sand
- d- (b) & (c)

13- The fish has streamline shape to ..... the water resistance

Or ships and submarines have streamline shapes to ..... water resistance (to increase their speed)

- a- Increase
- b- decrease
- c- (a) & (b)

14- The friction is in a direction ..... to the movement force (motion)

- a- Opposite
- b- Parallel
- c- same
- d- perpendicular

15- The friction force between water and the objects moving through it is called .....

- a- ground resistance
- b- air resistance
- c- Water resistance

16- When the parachutist open his parachute during landing , air resistance ...

- a- increase
- b- decrease
- c- doesn't change

17- The friction force between rough surfaces is ..... than that between smooth surfaces

- a- larger than
- b- less than
- c- similar to

18- When the surface area of the moving object increase, the friction force .....

- a- increase
- b- decrease
- c- doesn't change

19- ..... is from the advantages of the friction

- a- Wasting money
- b- Lighting up match
- c- Damaging machine parts

20- When the speed of the moving object increase, the friction force .....

- a- increase
- b- decrease
- c- doesn't change
- d- all the previous answers

21- Friction force depends on .....

- a- The type of the material surface only
- b- The surface area of the moving object
- c- The speed of the moving object
- d- a, b & c

22- There is ..... between the bicycle tires and the road

a- Pushing force

b- Movement force

c- Friction force

d- Stopping force

23- Sliding a body down over another body means that ....

a- The friction force between the two bodies is larger than the movement force

b- The friction force between the two bodies is smaller than the movement force

c- The movement force between the two bodies is smaller than the friction force

d- No correct answer

24- The stopping of a bike gradually during movement is due to the increase in .....

a- The friction force

b- The magnet

c- The attraction force

25- Birds or bats stretch their wings on landing to .....

a- Increase their surface area

b- Increase the air resistance

c- Decrease their speed

d- (a), (b) & (c)

26- Friction causes a great loss of money, because.....

a- It cause damages for machines

b- It forms magnet

c- It repairs a lot of machines

d- It provides the machines with new part

27- If the friction force is **greater than** the movement force, the object will ..

a- move

b- doesn't move

C- move in a constant speed (constant velocity)

28- If the friction force is **less than** the movement force, the object will ....

a- move

b- doesn't move

C- move in a constant speed (constant velocity)

29- If the friction force is **equals** the movement force, the object will ....

a- move

b- doesn't move

C- move in a constant speed (constant velocity)

30- The friction ..... Between smooth surfaces

a- increase

b- decrease


c- doesn't change

d- no correct answer

31- Mechanical machines must be cooled during operation to .....

- a- Raise its temperature                      b- Decrease its temperature to damage it  
c- Decrease its temperature to                      d- No correct answer  
protect it

32- The relation between surface area and friction force is represented by .....

- a-                       b-                       c-                       d- No correct answer

33- The relation between surface area (speed or velocity) and friction force is..

- a- inverse relation                      b- direct relation                      c- no relation

34- A moving car needs friction to .....

- a- Increase its speed                      b- Control its direction                      c- Decrease its speed                      d- (b)&(c)

### The answer

**Q1 : Look at the figures and answer the questions :**

- This figure represent the relation between **the friction force** and **the speed of the object (or the surface area)**

**Q2 : Choose :**

1	a	13	b	25	d
2	d	14	a	26	a
3	c	15	c	27	b
4	c	16	a	28	a
5	c	17	a	29	c
6	a	18	a	30	b
7	d	19	b	31	c
8	a	20	a	32	b
9	a	21	d	33	b
10	b	22	c	34	d
11	a	23	b		
12	b	24	a		

**Choose the correct answer:**

**1-Air resistance increases when .....**

( the car velocity decreases – the car velocity increases – the car changes its direction – the car doesn't move )

**2-When the parachutist opens his parachute during landing , air resistance .....**

( decreases – increases – doesn't exist )

**3-..... is the friction force resulting from the movement of any object through water**

( air resistance – magnetic force – water resistance – kinetic force ) .

**4-The fish has streamline shape to .....**

( reduce water resistance , increase its surface area – increase water resistance )

**5-The friction force between your shoes and the ground prevents.....**

( walking – running – slipping down )

**6-The friction force between a ball and dry cement floor is .....between the same ball and wet cement floor.**

(Higher than - Less than - Zero )

**7-The friction force depends on .....**

- a) The type of the material surface only.
- b) The surface area of the moving object.
- c) The attraction force.
- d) (a) and (b)

**8-The friction between the internal moving parts of machines causes.....**

- a)The erosion of the machines parts.
- b)The damage of the machines parts.
- c)An increase in their temperature.
- d)All the previous answers.

**9-The force that slows down the objects motion is called.....**

( inertia – gravity – friction – weight )

**10- When a rubber ball touches a sandy floor.....arises**

( inertia – gravity – friction – weight )

**11- The effect of friction force is in the ....direction of the objects movement.**

( same – opposite – parallel – perpendicular )

**12- The value of friction between two surfaces depends on the ..... of material of both surfaces.**

( length – mass – density – type )



**13- The presence of water on the road .....the friction between the cars and** (decrease – increase -doesn't change – no correct answer )

**14- The friction force between air and object that is called .....**  
( air resistance – magnetic force – water resistance – kinetic force )

**15- The resistance of water is in a direction .....to the direction of objects motion** ( same – opposite – parallel – perpendicular)

**16- The friction force between water and the objects that moves through it is called.....**  
( air resistance – magnetic force – water resistance – kinetic force )

**17- .....is from the advantages' of friction**  
a)erosion of the machines parts.  
b)damage of the machines parts.  
c)increase in their temperature.  
d)Stop the car during motion

**18- Birds have streamline shape to ..... the air resistance**  
(decrease – increase -doesn't change – no correct answer )

**19- Friction between small marble and ceramic is .....that between a big marble and ceramic**

(larger than – smaller than – equal – no correct answer )

**20- The .....are used to stop or control the car movement**

( tires – brakes – dynamo – chase )

**21- When the surface area of the moving object increase the friction force.....**

(decrease – increase -doesn't change – no correct answer )

**22- The relation between the area of the object surface exposed to air and the air resistance of its movement is .....relation**

( direct – inverse – all of them )

**23- to decrease the friction the moving objects takes .....**

(cylindrical – spherical – streamline )

**24- friction between car tires and the ground helps the car to .....**

(move – stop – slow – all the previous )

**25- the breaks of the car are an application on .....**

( inertia – gravity – friction – weight )

**26- when the speed of body increase the air resistance .....**

(decrease – increase -doesn't change – no correct answer )

**27- there is relation between the water resistance and the surface area of the moving body .....**

(curved- direct – indirect – inversely )

**28- friction force between rough surfaces is .....than between smooth surfaces .**

(larger – smaller – zero – similar )

**29- .....from factors affecting on water resistance .**

(speed of body – mass of body – lighting match)

**30- Modern cars are designed with streamline shape to .... air resistance**

( decrease – increase -doesn't change – no correct answer )

**31- Lighting up the match need friction force to generate .....**

( lighting- sound- electricity – attraction )

**32- In car engines .....exist to transmit the motion from the car engine axis to the wheels**

( lubricants – oil – ball bearings – battery)

## Model answer

- 1- the car velocity increases
- 2- increases
- 3- water resistance
- 4- reduce water resistance
- 5- slipping down
- 6- higher than
- 7- a&b
- 8- d
- 9- friction
- 10- friction
- 11- opposite
- 12- type
- 13- decrease
- 14- air resistance
- 15- opposite
- 16- water resistance
- 17- stop the car
- 18- decrease
- 19- smaller than
- 20- breaks
- 21- increase

- 22- direct
- 23- streamline
- 24- all the previous
- 25- friction
- 26- increase
- 27- direct
- 28- larger
- 29- speed of body
- 30- decrease
- 31- lighting
- 32- ball bearing



## 1 unit 1 lesson 1 Friction

\* Choose The correct answer :-

📖 1. Friction force acts in a direction .....the direction of motion

( **opposite to** – perpendicular to – parallel to – is the same )

📖📖 2- Friction force acts in a direction .....the direction of movement

( **opposite to** – perpendicular to – parallel to – is the same )

\*3-.....slow down the moving object ( movement force – heat energy – **friction force** – kinetic energy)

📖 4- the friction force decrease... (between rough surface area \_ **between smooth surface area** \_ by increasing surface )

\*5-Friction force depends on .....(the type of the material surface only-the surface area of the moving object- the speed of the moving object - **(a), (b) and (c)** )

📖 6-the fraction force between rough surfaces is.....the between smooth surfaces  
( **larger than** - less than - similar to )

📖 7- when the surface area of the moving object Increases, the fraction force.....  
( decrease- **Increases**- doesn't change)

📖 8- when the surface area of moving object decrease , friction force.....  
( increases – **decreases** - doesn't charge)

9-Friction force increases .....(by increasing the surface area of the moving object

-between rough surfaces- between smooth surfaces- **(a) and (b)**).

📖10-the friction force.....by increasing the surface area.

( decreases - **Increases** - constant )

📖11- by increasing the surface area, friction force.... (**increase** decrease \_ equal \_ a&b)

📖12-when the parachutist open his parachute during landing, air resistance ( **Increases**- decreases- does not change)

📖13-the cars and airoplanes are designed with streamline shapes ,.....air resistance ( **decreases**- increases- constant)

\*14-Air resistance increases when .....(the car velocity decreases- **the car velocity increases**-the car changes its direction-the car doesn't move)

\*15-Air resistance for a moving bicycle depends on .....(the speed of the bicycle- the surface area of the bicycle-the colour of the bicycle-**(a) and (b)**)

\*16-Rockets and aircrafts have streamline shapes .....(to increase air resistance- **to decrease air resistance**-to increase the surface area-to decrease water resistance).

\*17-Birds or bats stretch their wings on landing to .....(increase their surface area - increase the air resistance-decrease their speed-**(a) , (b) and (c)**)

\*18-..... is the friction force resulting from the movement of any object through water.

(Air resistance-Magnetic force-Water resistance-Kinetic force)

\*19-By decreasing the speed of the ship through water, water resistance

.....(increases-decreases-remains constant-no correct answer.)

\*20-Fish or dolphins have streamline shape to.....(reduce water resistance – reduce their surface area – increase water resistance – (a and b) )

📖21-the fish has streamline shape to... the water resistance (decrease \_ increase \_ a&b)

📖22-the force that opposes the motion of the boat in water is called....

(air resistance \_ water resistance \_ friction force \_ a&b)

📖23-the friction force between water and the objects moving through it is called ...

(ground resistance \_ air resistance \_ water resistance)

📖24-by decreasing the speed of the ship through water, water resistance..... ( decreases

- Increases - doesn't change)

25 - by increasing the speed of the ship through the water, water resistance will...

( increase \_ decrease \_ be constant)

26-During skating on ice ,a .....arises ( friction force – light energy – electricity )

\* 27-the stopping of a bike gradually during movement is due to the

increasing in.....( the friction force- the magnet - the attraction force - all the previous answers)

\*28- the moving bike is affected by air resistance that acts.....to its movement.( in the same direction – parallel- perpendicular direction - in the opposite direction - in the

\*29- modern cars are designed in streamline shapes to.....( increase air resistance- decrease air resistance – decreases water resistance attractive

\*30- by increasing the surface area of moving train ,air resistance increases this means that there is.....(a direct relation between them - an indirect relation between them - a curved relation between them - no relation between them)

\* 31-when the parachutist opens his parachute during landing, air resistance.....( decreases - increases - doesn't exist - remains constant)

## 2 Friction applications

\* Choose the correct answer :-

1. The brake of the car is an application on .....( **friction** – motion – speed )

2- the friction between your shoes and the ground prevents.....

( walking- running - **slipping down** - writing)

\*3- all following are advantages of friction except.....( it helps in moving and stopping cars and bicycles- it enables us to control the car speed- it enables us to walk- **it damages the internal moving parts of machines** )

\*4- car brakes that are used to stop cars depend on .....

(air resistance - water resistance - **friction force** - a,b,c )

\*5- friction force is necessary for.....

( lighting a match - changing the car direction - moving a car forwards - **a,b,c** )

\*6- friction between the internal moving parts of a machine causes.....

( the erosion of the machine parts - the damage of the machine parts - the increase their temperature - **all the previous answers** )

\*7- friction causes a great loss of money, because..... ( **it cause damages for machines** - it forms magnets - it repairs a lot of machines-it provides the machines with new parts)

\*8- machines need ..... to protect their internal moving parts from damage

( Continuous heating - light - **Continuous cooling** - a,b,c )



## 1 unit 1 lesson 1 Friction

\* Choose The correct answer :-

📖 1. Friction force acts in a direction .....the direction of motion

( opposite to – perpendicular to – parallel to – is the same )

📖📖 2- Friction force acts in a direction .....the direction of movement

( opposite to – perpendicular to – parallel to – is the same )

\*3-.....slow down the moving object ( movement force – heat energy –friction force – kinetic energy)

📖 4- the friction force decrease... (between rough surface area \_ between smooth surface area \_ by increasing surface )

\*5-Friction force depends on .....(the type of the material surface only-the surface area of the moving object- the speed of the moving object - (a), (b) and (c) )

📖 6-the fraction force between rough surfaces is.....the between smooth surfaces ( larger than - less than - similar to )

📖 7- when the surface area of the moving object Increases, the fraction force.....

( decrease- Increases- doesn't change)

📖 8- when the surface area of moving object decrease , friction force.....

( increases – decreases - doesn't charge)

9-Friction force increases .....(by increasing the surface area of the moving object

-between rough surfaces- between smooth surfaces- (a) and (b)).

📖10-the friction force.....by increasing the surface area.

( decreases - Increases - constant )

📖11- by increasing the surface area, friction force.... (increase \_ decrease \_ equal \_ a&b)

📖12-when the parachutist open his parachute during landing, air resistance ( Increases- decreases- does not change)

📖13-the cars and airoplanes are designed with streamline shapes ,.....air resistance ( decreases- increases- constant)

\*14-Air resistance increases when .....(the car velocity decreases- the car velocity increases-the car changes its direction-the car doesn't move)

\*15-Air resistance for a moving bicycle depends on .....(the speed of the bicycle- the surface area of the bicycle-the colour of the bicycle-(a) and (b))

\*16-Rockets and aircrafts have streamline shapes .....(to increase air resistance- to decrease air resistance-to increase the surface area-to decrease water resistance).

\*17-Birds or bats stretch their wings on landing to .....(increase their sufrace area - increase the air resistance-decrease their speed-(a) , (b) and (c))

\*18-..... is the friction force resulting from the movement of any object through water.

(Air resistance-Magnetic force-Water resistance-Kinetic force)

\*19-By decreasing the speed of the ship through water, water resistance

.....(increases-decreases-remains constant-no correct answer.)

\*20-Fish or dolphins have streamline shape to.....(reduce water resistance – reduce their surface area – increase water resistance – (a and b) )

📖21-the fish has streamline shape to... the water resistance (decrease \_ increase \_ a&b)

📖22-the force that opposes the motion of the boat in water is called....

(air resistance \_ water resistance \_ friction force \_ a&b)

📖23-the friction force between water and the objects moving through it is called ...

(ground resistance \_ air resistance \_ water resistance)

📖24-by decreasing the speed of the ship through water, water resistance..... ( decreases - Increases - doesn't change)

25 - by increasing the speed of the ship through the water, water resistance will...

( increase \_ decrease \_ be constant)

26-During skating on ice ,a .....arises ( friction force – light energy – electricity )

\* 27-the stopping of a bike gradually during movement is due to the

increasing in.....( the friction force- the magnet - the attraction force - all the previous answers)

\*28- the moving bike is affected by air resistance that acts.....to its movement.( in the same direction – parallel- perpendicular direction - in the opposite direction - in the

\*29- modern cars are designed in streamline shapes to.....( increase air resistance-

decrease air resistance – decreases water resistance attractive

\*30- by increasing the surface area of moving train ,air resistance

increases this means that there is.....(a direct relation between them - an indirect relation between them - a curved relation between them - no relation between them)

\* 31-when the parachutist opens his parachute during landing, air resistance.....( decreases - increases - doesn't exist - remains constant)

## 2 Friction applications

\* Choose the correct answer :-

📖1. The brake of the car is an application on .....( friction – motion – speed )

2- the friction between your shoes and the ground prevents.....  
( walking- running - slipping down - writing)

\*3- all following are advantages of friction except.....( it helps in moving and stopping cars and bicycles- it enables us to control the car speed- it enables us to walk- it damages the internal moving parts of machines)

\*4- car brakes that are used to stop cars depend on .....

(air resistance - water resistance - friction force - a,b,c)

\*5- friction force is necessary for.....

( lighting a match - changing the car direction - moving a car forwards - a,b,c )

\*6- friction between the internal moving parts of a machine causes.....

( the erosion of the machine parts - the damage of the machine parts -  
the increase their temperature - all the previous answers )

\*7- friction causes a great loss of money, because..... ( it cause damages for  
machines - it forms magnets - it repairs a lot of machines-it provides the  
machines with new parts)

\*8- machines need ..... to protect their internal moving parts from damage  
( Continuous heating - light - Continuous cooling - a,b,c )

## Revision on unit One

## Qz(1) Choose the correct answer:

- 1- The friction between your shoes and the ground prevents.....
- a. walking                      b. slipping down                      c. writing
- 2- The presence of water on a road,.....the friction force between car tires and the road.
- a. increases                      b. decreases                      c. doesn't effect
- 3- To decrease the friction force, we must use.....
- a. lubricants and oil.                      b. batteries                      c. (a) and (b)
- 4- Fish or dolphins have streamline shapes to.....
- a. reduce water resistance                      b. increase water resistance                      c. (a) and (b)
- 5- When the parachutist opens his parachute during landing, air resistance.....
- a. decreases                      b. increases                      c. doesn't exist
- 6- Friction between a small marble and ceramic is.....that between a big marble and ceramic.
- a. larger than                      b. smaller than                      c. equal to
- 7- .....can be used to form a thin layer between the internal moving parts of machines to decrease friction.
- a. lubricating                      b. oiling                      c. (a) and (b)
- 8- Friction force acts in a direction..... the direction of motion.
- a. opposite to                      b. in the same                      c. parallel to                      d. no correct answer
- 9- All of the following factors reduce the friction force except.....
- a. lubricants                      b. oil                      c. increasing the surface area of the moving parts.
- 10- During skating on ice, a (an) .....arises.





a. friction force

b. electricity

c. movement force

11- Air resistance increases when.....

a. The car velocity decreases

b. The car velocity increases

c. the car doesn't move.

12- When the parachutist opens his parachute during landing, air resistance.....

a. decreases

b. increases

c. remain constant

13- When the surface area of the moving object increases, the friction force.....

a. increases

b. decreases

c. doesn't change

14- Air resistance .....

a. acts in the same direction of air motion

b. has no direction

c. acts in the opposite direction of air motion

d. all the previous

15- .....is essential to light a match.

a. pushing force

b. movement force

c. friction force

d. no correct answer

16- When the parachutist opens his parachute during landing, air resistance.....

a. decreases

b. increases

c. doesn't change

d. no correct answer

17- The friction force between air and the objects moving through it is called.....

a. ground resistance

b. air resistance

c. water resistance

d. no correct answer

18- The brakes of the car are an application of.....

a. energy

b. friction

c. motion

d. no correct answer

19- The friction force between water and the objects moving through it is called.....

a. ground resistance

b. air resistance

c. water resistance

d. no correct answer

20- To decrease the friction force, the modern cars are designed in a.....shape.

- a. cylindrical      b. spherical      c. streamline      d. perpendicular

21- Lighting up a match needs friction force to generate.....

- a. heat      b. electricity      c. sound      d. attraction

22- It is advisable not to increase the car speed up to a certain limit to reduce.....

- a. air resistance      b. consumption of fuel  
c. (a) , (b)      d. no correct answer

23- Friction force acts in a\an .....direction to the direction of motion.

- a. opposite      b. perpendicular      c. parallel      d. no correct answer

24- By decreasing the speed of a ship through water, water resistance.....

- a. increases      b. decreases      c. remains as it is      d. is doubled

25- The friction force that arises between air and the objects moving through it is called.....

- a. ground resistance      b. air resistance      c. water resistance

26- The brakes of the car are an application of.....

- a. energy      b. friction      c. motion      d. no correct answer

27- During going down, the.....arises.

- a. movement force      b. friction force      c. magnetic force

28- .....is the friction force that arises due to the movement of objects through air.

- a. air resistance      b. water resistance  
c. movement force      d. magnetic force

## 2- Complete the following sentences:

1- The force that slows down the objects' motion is called.....

2- The effect of the friction force is in the.....direction of the object's movement.

- 3- .....enables us to walk on ground.
- 4- Car brakes depend on.....force in slowing down and stopping cars.
- 5- The rise in temperature of the moving parts of machines is due to.....
- 6- The wet roads leads to.....between car tires and the road.
- 7- The friction force between air and the object that moves through is called.....
- 8- .....increases by increasing the surface area of a moving objects.
- 9- .....is formed of a group of small metallic balls with smooth surfaces.
- 10- .....enables us to walk on ground.
- 11- Fish have streamline shapes to.....
- 12- The friction force between water and the object that moves through is called.....
- 13- Lubrication is the most important way to decrease the.....
- 14- The force that slows down the motion of an object is called.....
- 15- The friction force that arises as a result of an object's motion in water is called.....
- 16- Technicians put.....and.....between.....to decrease friction force.
- 17- Rockets and trains have a.....shape to decrease friction force.
- 18- The force of..... acts in the opposite direction of the motion of an object.





- 19- The force that arises between two tangent surfaces and acts in the opposite direction of motion is called.....
- 20- Wet roads lead to.....friction between car tires and the road.
- 21- Air resistance acts in.....direction of the movement.
- 22- .....and.....are used to decrease the friction force between the moving parts of machines.
- 23- The friction force between the air and an object that moves through is called.....
- 24- The friction force that arises as a result of an object's motion in water is called.....
- 25- The force that arises between two tangent surfaces and acts in the opposite direction of motion is called.....
- 26- The resistance of water is a/an .....direction to the direction of an object's motion.
- 27- The effect of the friction force is in the.....direction of the object's movement.
- 28- Wet roads lead to.....friction between car tires and the road.
- 29- The friction force that arises as a result of an object's motion in water is called.....
- 30- Air resistance acts in.....direction of the movement.
- 31- .....and.....are used to decrease the friction force.



**3- Write the scientific term:**

- 1- A metallic structure used to decrease the friction force. (.....)
- 2- A force opposes the motion of a boat in the river. (.....)
- 3- A force helps us in running and walking. (.....)
- 4- A force which is necessary for lighting a match (.....)
- 5- A metallic structure used to decrease the friction force(.....)
- 6- A set of small balls with smooth surface is put between the internal moving parts of machines. (.....)
- 7- A force helps us in running and walking (.....)
- 8- A force acts in the opposite to the movement force (.....)
- 9- The force that opposes the movement direction of the parachutist.(.....)
- 10- The type of friction force that arises as a result of the motion of an object in water . (.....)
- 11- The direction of friction force according to the direction of motion.  
(.....)



- 12- A set of small balls with smooth surface is put between the internal surfaces of the moving objects of machines. (.....)
- 13- The force that arises between two tangent surfaces and acts in the opposite direction of movement. (.....)
- 14- The friction force between the water and an object that moves through is called. (.....)
- 15- A force which is necessary for lighting a match. (.....)
- 16- A type of friction force that arises as a result of the motion of an object in air. (.....)
- 17- The substances that forms a thin layer between two surfaces inside mechanical machines. (.....)
- 18- The force that slows down a moving object and has an effect in the opposite direction of the object's motion. (.....)
- 19- The force that arises between two tangent surfaces and acts in the opposite direction of movement. (.....)
- 20- The friction force between the water and an object that moves through is called. (.....)





- 21- A set of small balls with smooth surface is put between the internal moving parts of machines. (.....)
- 22- The friction force that arises between the air and the objects moving through it. (.....)
- 23- The substances that forms a thin layer between two surfaces inside the internal parts of a mechanical machine. (.....)
- 24- A set of small balls with smooth surface is put between the internal surfaces of the moving objects of machines. (.....)
- 25- A type of friction force that arises as a result of the motion of an object in air. (.....)
- 26- A type of friction force that arises as a result of the motion of an object in water. (.....)
- 27- The force that slows down a moving object and has an effect in the opposite direction of the object's motion. (.....)

**4- Put (✓) or (X):**

- 1- Friction is necessary for lighting a match. (       )
- 2- Air resistance decreases When the car moves so fast. (       )



- 3- Friction force between a rubber ball and a sandy floor is smaller than that between the same ball and the classroom floor. (      )
- 4- Birds and bats stretch their wings during landing to decrease air resistance. (      )
- 5- The friction force is always in the same direction of the movement of the object. (      )
- 6- Friction force decreases between rough surfaces and increases between smooth surfaces. (      )
- 7- Car tires should be replaced when their grooves disappear (      )
- 8- Air resistance decreases when the car moves so fast. (      )
- 9- Lubricants and oil are used to decrease the friction force. (      )
- 10- Friction force decreases between rough surfaces and increases between smooth surfaces. (      )
- 11- Friction force is the reason for stopping any body during motion (      )
- 12- Air resistance decreases when the car moves so fast. (      )
- 13- Friction force is the reason for stopping any body during motion. (      )
- 14- The friction force acts in the opposite direction of motion. (      )
- 15- The presence of water on the road enables the driver to control the motion of the car. (      )
- 16- Consumption of fuel increases as the car's speed increases. (      )
- 17- Air resistance increases by decreasing the speed of a moving body. (      )

- 18- Lubricants and oil are used to decrease the friction force as they consist of small metallic balls with small surfaces. (      )
- 19- The presence of water on the road enables the driver to control the motion of the car. (      )
- 20- When a parachutist opens his parachute, the friction force decreases.(      )
- 21- The friction force between two surfaces is greater during moving than stopping. (      )
- 22- The pushing of an object forwards is opposed by a friction force at the same direction. (      )
- 23- Friction force works on slowing down the speed of a bike moving on the ground. (      )
- 24- Air resistance increases by decreasing the speed of a moving body. (      )
- 25- Air resistance decreases When the car moves so fast. (      )
- 26- Air resistance to the objects moving in high speeds cannot be observed. (      )
- 27- Friction damages the internal parts of machines. (      )
- 28- Consumption of fuel increases as the cars speed increases. (      )
- 29- By increasing the bicycle speed, air resistance increases. (      )
- 30-Friction force is always in the same direction of the object's movement.(      )

**5- Correct the underlined word:**

- 1- When the surface area of the moving object increases, the friction force decreases. (.....)



- 2- When a parachutist opens his parachute, air resistance **decreases**.  
(.....)
- 3- To decrease the friction force, we must use **batteries**. (.....)
- 4- Trains and aircrafts are designed in streamline shapes to **increase** the air resistance. (.....)
- 5- The friction force always acts in the **same** direction of motion. (.....)
- 6- The air resistance to a car decreases when the car moves so **fast** (.....)
- 7- When the friction force between the air and a car is equal to the force that moves it, the speed of the car is **equal to zero**. (.....)
- 8- The effect of friction force is in the **perpendicular** direction of the movement.  
(.....)
- 9- By increasing the speed of a body, the friction force **decreases**. (.....)
- 10- The friction force **increases** by decreasing the speed of an object. (.....)

**6- Give reasons for:**

1- A fish has a streamline shape.

.....  
.....

2- Lubricants and oil are used in the mechanical machines.

.....  
.....

3- If you push a toy car on the floor, it moves for a certain distance till it stops.

.....  
.....



4- Parachutist opens the parachute on landing.

5- Friction force has many disadvantages.

6- The car movement needs friction force.

7- Birds bodies have streamline shapes.

8- The car movement needs friction force.

9- Damage of the internal parts of machines.

10- The car movement needs friction force.

11- Ball bearings are used between the surfaces of the moving parts of machines.

12- Rockets and aircrafts have a streamline shape.



13- Lubricants and oil are used in the mechanical machines.

14- A bat stretches its wings on landing.

15- Friction force causes the damage of machines.

16- Trains have a streamline shape.

17- Birds stretch their wings on landing.

18- Modern cars are designed in a streamline shape.

19- Rockets and aircrafts have a streamline shape.

### 7- What happens if...?

1- Moving cars with high speed on a wet road.





2- You stop pedalling during the movement of the bike.

3- The speed of the aircraft increases.

4- There are no grooves and narrow channels in the car tires.

5- Moving cars with high speed on a wet road.

6- The speed of the aircraft increases.

7- A swimmer swims in water with a very high velocity.

8- No lubricants takes place periodically on the metallic machines.

9- A bat stretches its wings on landing.

10- The car moves so fast on a wet road.

.....

.....

### 8- Write the function of:

1- Ball bearings in the car engine.

.....

.....

2- Lubricants and oil in machines.

.....

.....

3- A fish has a streamline shape.

.....

.....

4- Ball bearings in the car engine.

.....

.....

5- Ball bearings.

.....

.....

6- Lubricants and oil.

.....

.....

### 9- What is meant by...?

1- Friction force.

.....

.....



2- Air resistance.

.....

.....

**10- The friction force is very necessary. Write the advantage of friction.**

1-.....

2-.....

Ahmed  
Abd  
Elgawad

## Choose the correct answer

1-.....is a force that slows down speed

(moving - pushing - friction )

2-.....arises between car tire and road

(moving - pushing - friction )

3-car brakes depend on .....

(friction - magnetic - pushing )

4-car has .....to decrease air resistance

(cylindrical - hexagonal -streamline )

5-we can't observe air resistance when car moves with  
.....

(high speed - low speed - speed equals zero )

6-the relation between surface area and friction is .....

(inverse - direct - vertical )

7-the friction force is affected on .....direction

(same - opposite - perpendicular )

8-the friction force .....by increasing the surface area

(decrease - increase - constant )

9-by increasing the speed of ship through water ,water resistance .....

(decrease - increase - doesn't change )

10-when the surface area of moving object increases,the air resistance .....

(increase - decrease - doesn't change)

11-the cars and planes are designed with streamline shaped ,.....

(decrease - increase - constant )

12-the friction force between rough surfaces is .....that between smooth surfaces

(larger than - less than - smaller than )

13-when the parachutist open his parachute during landing ,air resistance .....

(increase - decrease - doesn't change )

14-the friction between your shoes and ground prevents.....(walking - running - slipping down - writing)

15-.....is (are )factor(s) that affect on friction

(surface area of object - types of touched surface - speed of object- all previous answers)

16-the friction force between object and water is called .....

(water resistance - air resistance - ground resistance)

17-the fish has streamline shape to .....water resistance

(reduce - increase - a and b )

18-the rubber ball moves longer distance on .....surface

(dry cement - ceramic - sand )

19-the force opposes the motion of boat in water is

(air resistance - water resistance - a and b )

20-by increasing speed of ship through water ,water resistance .....

(increase - decrease - constant )

21-the friction force decreases.....

(between rough surface -between smooth surface -  
increasing surface area )





## Science Exercises

Grad (5)

المادة: الفيزياء

Lesson (1) and (2)

(H)

أختار أختيار من مقدار على الدرس الأول والثاني

Choose the correct answer:

① During skating on ice a ----- arises

Ⓐ Light energy    Ⓑ Friction force    Ⓒ electricity

② The rubber ball moves for a longer time  
a ----- surface

Ⓐ dry cement    Ⓑ sand    Ⓒ ceramic

③ ----- slows down the moving object

Ⓐ Kinetic energy    Ⓑ Heat energy    Ⓒ Friction force

④ The friction between internal parts of machines  
Leads to -----

Ⓐ decrease the temperature of their parts

Ⓑ increase the temperature of their parts

Ⓒ increase the productivity

⑤ Friction force acts in a direction -----  
the direction of motion

Ⓐ opposite to    Ⓑ is the same    Ⓒ Parallel to

⑥ when the speed of the moving object increases  
the friction force -----

Ⓐ decreases    Ⓑ increases    Ⓒ doesn't change

7 - Fish or dolphins have streamline shapes to -----

- (a) reduce water resistance
- (b) reduce their surface area
- (c) increases water resistance
- (d) (a) and (b)

8 - By decreasing the speed of a ship through water, water resistance -----

- (a) increases
- (b) decreases
- (c) remains constant

9 sliding a body down over another body means that -----

- (a) the friction force between the two bodies is larger than the movement force
- (b) the friction force between the two bodies is smaller than the movement force
- (c) the movement force between the two bodies is smaller than the friction force

10 Friction force increases -----

- (a) by increasing the surface area
- (b) between rough surfaces
- (c) between smooth surfaces
- (d) (a) and (b)

11 The friction force always in the ----- direction of the movement of the object

- (a) opposite
- (b) same
- (c) No Answer



12. \_\_\_\_\_ is the friction force resulting from the movement of any object through water
- (a) Air resistance      (b) Kinetic force  
(c) water resistance

13. Birds or bats stretch their wings on landing to \_\_\_\_\_
- (a) increase their surface area  
(b) increase the air resistance  
(c) decrease their speed  
(d) All Previous answers

14. when the Parachutist open his Parachute during landing, air resistance
- (a) decreases      (b) increases  
(c) doesn't exist      (d) remains constant

15. aircrafts and Rockets have streamline shapes to \_\_\_\_\_
- (a) increase air resistance  
(b) decrease air resistance  
(c) increase the surface area

16. Air resistance increases when \_\_\_\_\_
- (a) the car velocity decreases  
(b) the car change its direction  
(c) the car velocity increases

17. The stopping of a bike during movement gradually is due to the increases \_\_\_\_\_

a - Friction force      b - attraction force      c - the Magnet

4

18

The moving bike is affected by air resistance that acts ----- to its movement.

- (a) in the perpendicular direction
- (b) in the same direction
- (c) in the opposite direction

19

Rockets and new car have a -----

- (a) rectangle shapes
- (b) a stream line shape
- (c) square shape

20

The moving car is affected by air resistance in the ----- of its movement

- (a) same direction
- (b) circle direction
- (c) opposite direction

21

Friction force ----- the moving object

- (a) slow down
- (b) not effect
- (c) same direction

22

decreases the surface area, the water resistance -----

- (a) increase
  - (b) decrease
- c - (a) and (b)

23

increasing air resistance by -----

- (a) increases surface area
- (b) decreasing surface area
- (c) decreasing speed



5

24 to decrease friction force, the object moves have .....

- (a) streamline shape (b) square shape (c) circle shape

25 The force between two surfaces in contact is called .....

- (a) Friction force (b) Magnetic force (c) Magnetic field

26 The friction force decrease between .....

- (a) Rough surface (b) smooth surface (c) a and b

27 The relation between speed and friction force is .....

- (a) direct relation (b) inverse relation (c) No answer

28 If you run fast in open air feel the effect .....

- (a) water resistance (b) air resistance (c) No effect

29 when bats stretch their wings its speed .....

- (a) increase (b) decrease (c) No answer

30 decrease surface area, leads to .....

- (a) increase water resistance  
(b) decrease water resistance  
(c) increasing kinetic force

6  
[31] Machines need ..... to protect their parts from damage

- (a) - Light    (b) - Continuous heating    (c) continuous cooling

[32] Friction causes a great loss of money because .....

- (a) - it forms magnets  
(b) - it causes damages for machines  
(c) - it provides the machines with new parts

[33] All the following are advantages of friction except .....

- (a) - it helps in moving and stopping car  
(b) - it enables us to walk  
(c) - it damages the parts of machines

[34] The friction between your shoes and the ground prevents .....

- (a) walking    (b) - running    (c) slipping down

[35] Friction force is necessary for .....

- (a) Lighting a match  
(b) changing the car direction  
(c) Moving a car forwards  
(d) - All previous answers



7

36 Friction is ..... For Lighting a Match

- (a) necessary (b) not necessary (c) (a) and (b)
- 

37 without ....., things will slid down through our hands

- (a) Friction (b) Manteic (c) Cooling
- 

38 The Friction Force between rough surfaces is ..... that between smooth surfaces.

- (a) larger than (b) less than (c) Zero
- 

39 There is ..... relation between the water resistance and surface area of the moving body

- (a) curved (b) a direct (c) an indirect
- 

40 Lighting up a Match needs Friction Force to generate .....

- (a) heat (b) sound (c) electricity
- 

~~Handwritten signature~~  
(H)

- ① b
- ② c
- ③ c
- ④ b
- ⑤ a
- ⑥ b
- ⑦ d
- ⑧ b
- ⑨ b
- ⑩ d
- ⑪ a
- ⑫ c
- ⑬ d
- ⑭ b
- ⑮ b
- ⑯ c
- ⑰ a

- ⑱ c
- ⑲ b
- ⑳ c
- ㉑ a
- ㉒ b
- ㉓ c
- ㉔ a
- ㉕ a
- ㉖ b
- ㉗ a
- ㉘ b
- ㉙ b
- ㉚ b
- ㉛ c
- ㉜ b
- ㉝ c
- ㉞ c

- ㉟ d
- ㊱ a
- ㊲ a
- ㊳ a
- ㊴ b
- ㊵ a